

McIntosh

MQ 104 CUSTOM ENVIRONMENTAL EQUALIZER



SERVICE INFORMATION

SERIAL NO. AM2001 AND ABOVE

PERFORMANCE LIMITS & RATINGS

FREQUENCY RESPONSE

20Hz to 20,000Hz, $\pm 0.5\text{dB}$ (with equalization set flat)

HUM AND NOISE

Flat response, 90dB ($79\mu\text{V}$) below rated output (2.5 V)
Worst case setting, 85dB ($140\mu\text{V}$) below rated output (2.5 V)

HARMONIC DISTORTION

Does not exceed .1% at rated output level (2.5 V), 20Hz to 20KHz.

INTERMODULATION DISTORTION

Does not exceed .1% at rated output level (2.5 V), 20Hz to 20KHz.

EQUALIZATION

$\pm 12\text{dB}$ at one-third octave frequency centers, from 20Hz to 1kHz. Bandwidth selectable: Narrow (approx. 1/3 octave)
Wide (approx. 1 octave)

LOW FREQUENCY COMPENSATION

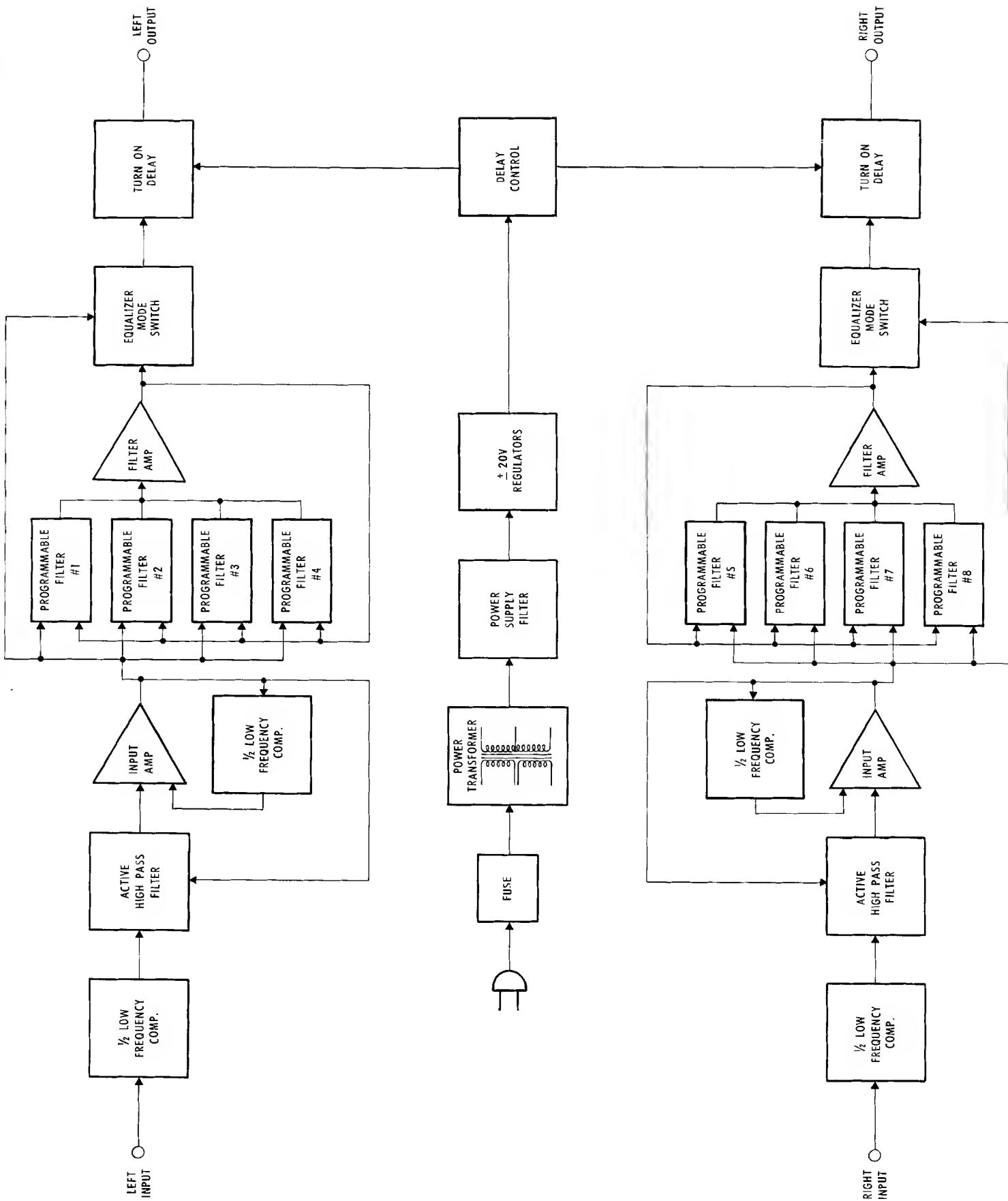
Five steps of low frequency compensation are included for McIntosh speakers, allowing 0 to + 17dB at 20Hz.

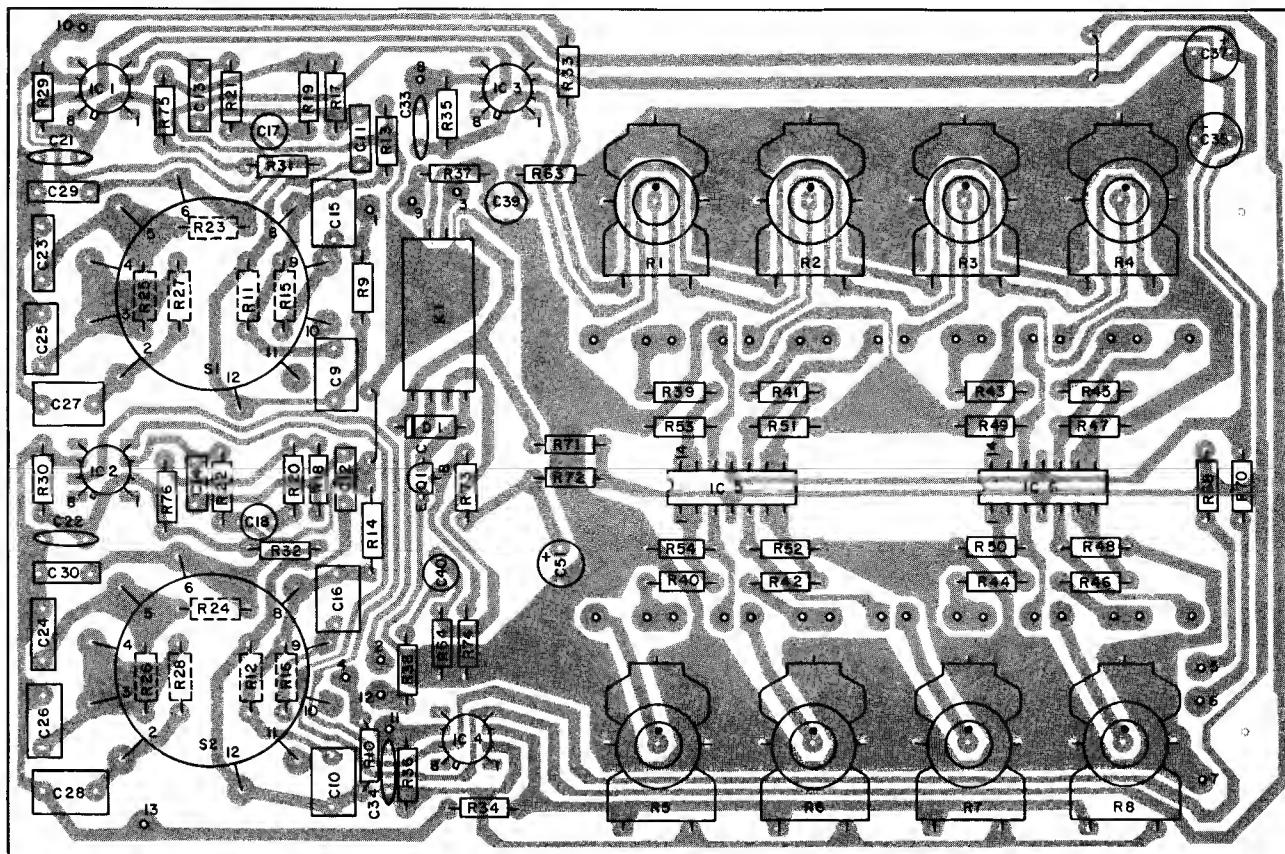
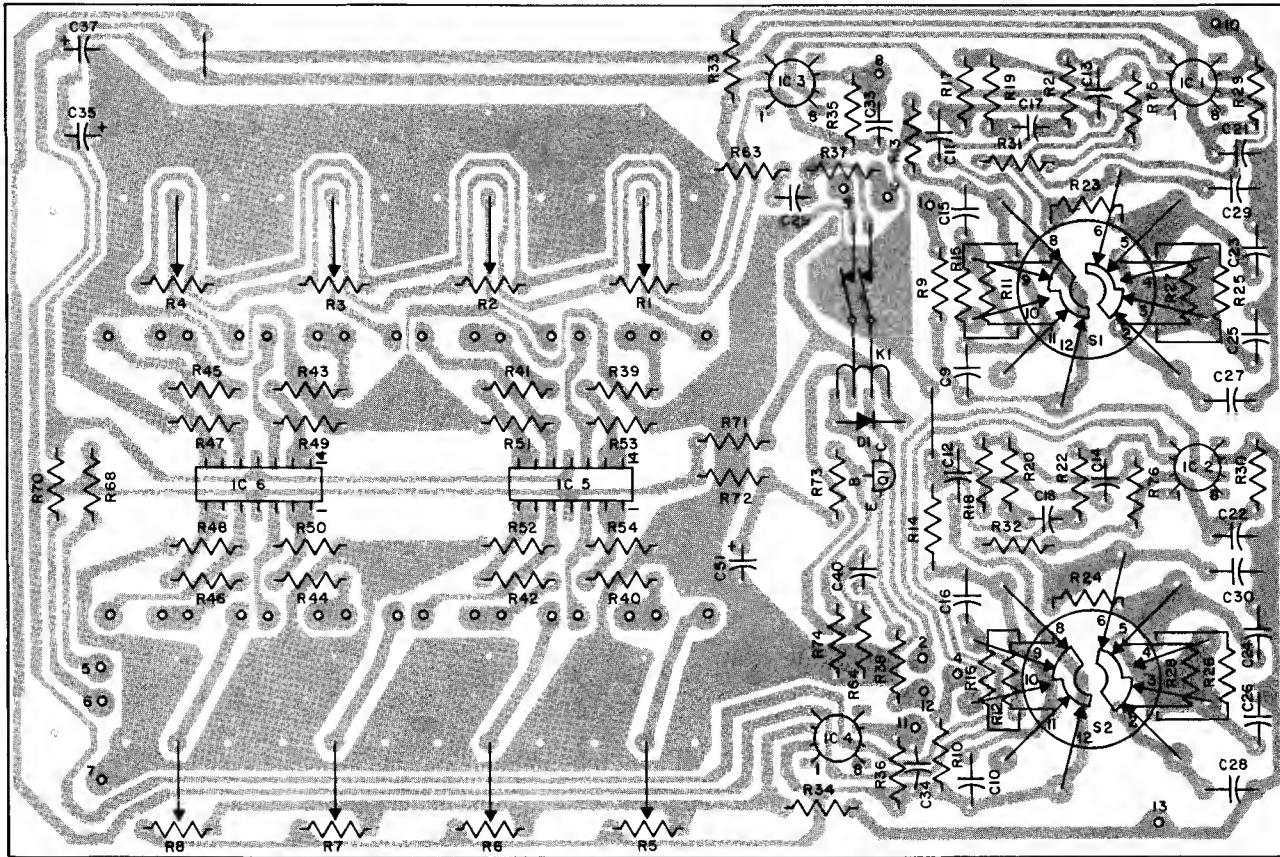
INPUT IMPEDANCE

$27\text{k}\Omega$

OUTPUT IMPEDANCE

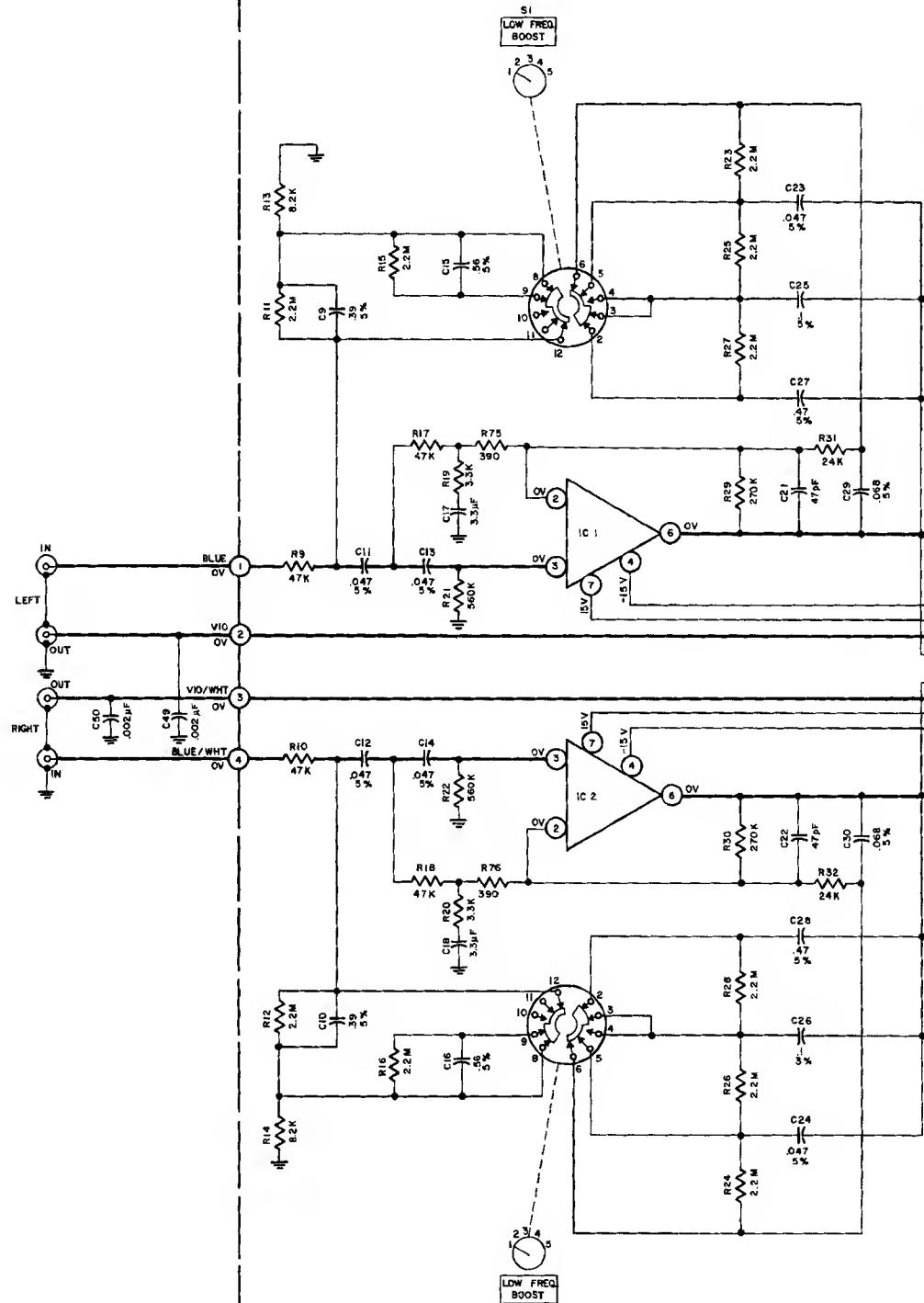
600Ω ; to operate into $10\text{k}\Omega$ load or greater





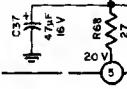
EQUALIZER PC BOARD
045-273

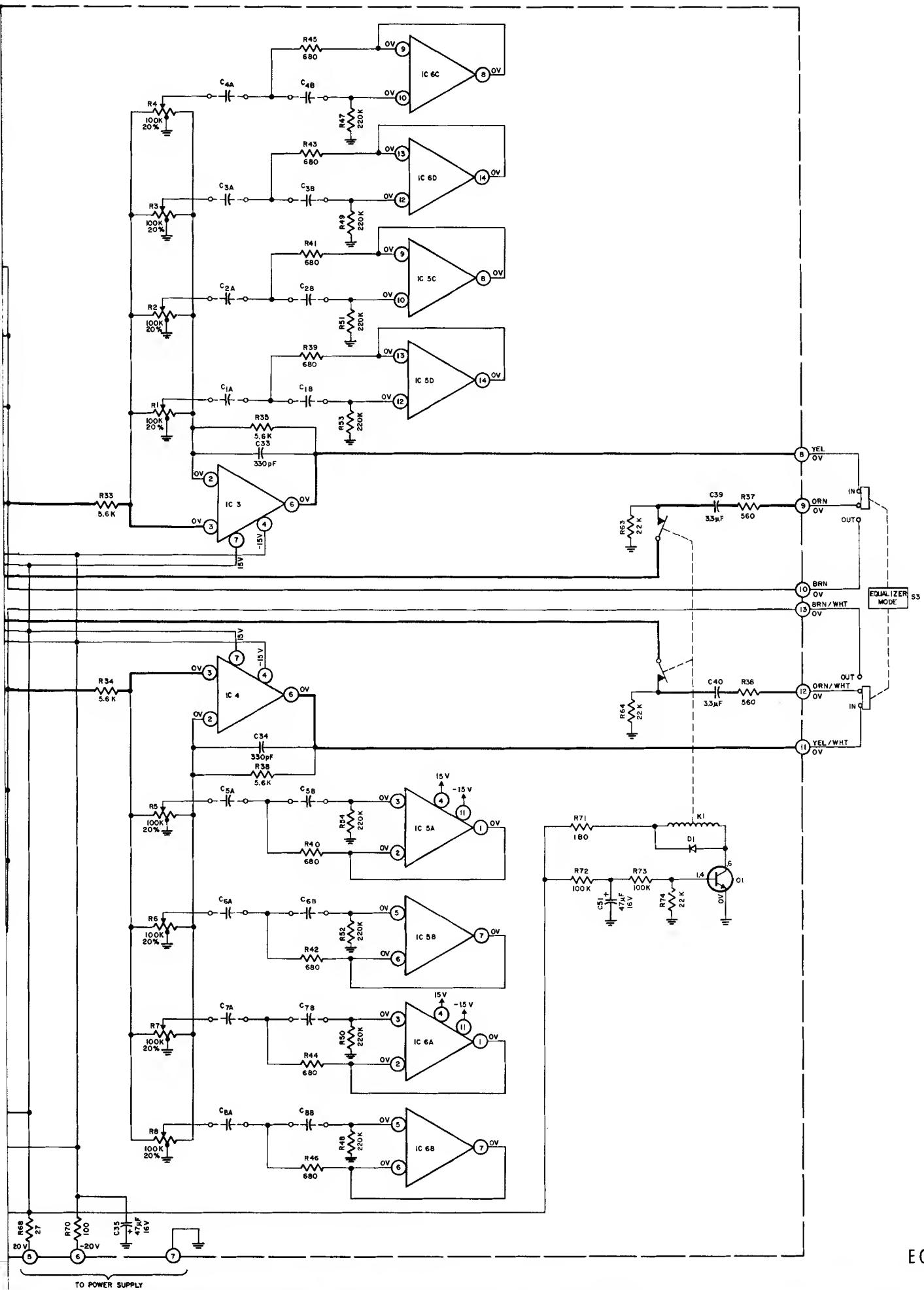
EQUALIZER PC BOARD
045-273



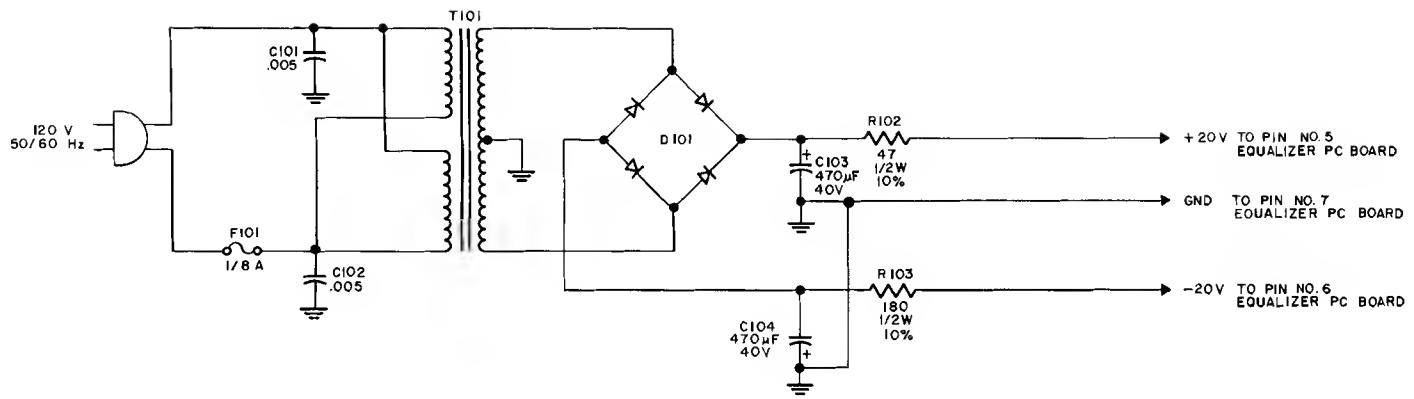
TO PIN 4 ON IC 5,6 ←

TO PIN 11 ON IC 5,6 ←





EQUALIZER



POWER SUPPLY

SCHMATIC NOTES

1. Unless otherwise specified: Resistance values are in ohms, 1/4 watt, and 5% tolerance; capacitance values smaller than 1 are in microfarads (μF); capacitance values greater than 1 are in picofarads (pF).
2. Printed circuit board components are outlined on the schematics by dotted lines. The circled numbers around the dotted lines correspond to the numbers on the PC Board layouts.
3. The heavy lines on the schematics denote the primary signal path.
4. The terminal numbering of rotary switches is for reference only.
5. All voltages indicated on the schematics are measured under the following conditions:
 - a. Use of an 11 megohm input impedance VTVM.
 - b. All voltages $\pm 10\%$ with respect to chassis ground.
 - c. No signal at input terminals.
 - d. AC input at 120 volts, 50/60 Hz.

REPLACEMENT PARTS

All parts not listed are common items obtainable from radio parts jobbers.

Replacement parts may be obtained when ordered by PART NUMBER from:

McIntosh Laboratory, Inc.
Customer Service Department
2 Chambers Street
Binghamton, New York 13903
(telephone 607-723-3512)

			RESISTORS					
Symbol Number	Description	Part Number	R9.10	Film Res.	47K	5%	1/4W	141-088
			R11,12	Film Res.	2.2M	5%	1/4W	141-124
CAPACITORS								
C9,10	Mylar .39μF	064-193	R13,14	Film Res.	8.2K	5%	1/4W	141-070
C11,12	Mylar .047μF	100V	064-182	R15,16	Film Res.	2.2M	5%	1/4W
C13,14	Mylar .047μF	100V	064-182	R17,18	Film Res.	47K	5%	1/4W
C15,16	Mylar .56μF	064-219	R19,20	Film Res.	3.3K	5%	1/4W	141-060
C23,24	Mylar .047μF	100V	064-182	R21,22	Film Res.	560K	5%	1/4W
C25,26	Mylar .1μF	100V	064-186	R23,24	Film Res.	2.2M	5%	1/4W
C27,28	Mylar .47μF	100V	064-194	R25,26	Film Res.	2.2M	5%	1/4W
C29,30	Mylar .068μF	100V	064-184	R27,28	Film Res.	2.2M	5%	1/4W
C39,40	Elect. 3.3μF	35V	066-238	R29,30	Film Res.	270K	5%	1/4W
C35	Elect. 47μF	16V	066-215	R31,32	Film Res.	24K	5%	1/4W
C37	Elect. 47μF	16V	066-215	R33,34	Film Res.	5.6K	5%	1/4W
C51	Elect. 47μF	16V	066-215	R35,36	Film Res.	5.6K	5%	1/4W
C103,104	Elect. 470μF	40V	066-134	R37,38	Film Res.	560Ω	5%	1/4W
DIODES								
D1	Si Sig. Diode	070-047	R39,40	Film Res.	680Ω	5%	1/4W	141-045
D101	Bridge 400V 2A	070-044	R41,42	Film Res.	680Ω	5%	1/4W	141-045
RELAYS								
K1	Reed Relay	087-024	R43,44	Film Res.	680Ω	5%	1/4W	141-045
TRANSISTORS								
Q1	Si NPN transistor	132-090	R45,46	Film Res.	680Ω	5%	1/4W	141-045
INTEGRATED CIRCUITS								
IC1,2	Integrated circuit	133-051	R47,48	Film Res.	220K	5%	1/4W	141-104
IC3,4	Integrated circuit	133-054	R49,50	Film Res.	220K	5%	1/4W	141-104
IC5,6	Integrated circuit	133-065	R51,52	Film Res.	220K	5%	1/4W	141-104
TRANSFORMERS								
T101	Power transformer	159-138	R53,54	Film Res.	220K	5%	1/4W	141-104
POTENTIOMETERS								
R1,2	100K	134-302	R63,64	Film Res.	22K	5%	1/4W	141-080
R3,4	100K	134-302	R71	Film Res.	180	5%	1/4W	141-031
R5,6	100K	134-302	R72,73	Film Res.	100K	5%	1/4W	141-096
R7,8	100K	134-302	R74	Film Res.	22K	5%	1/4W	141-080
SWITCHES								
S1,2	L.F. Equalization	146-150	R75,76	Film Res.	390Ω	5%	1/4W	141-039
MISCELLANEOUS ITEMS								
F101	Fuse 1/8A Normal Blo		F101	Fuse	1/8A	Normal Blo		089-035
				Knob, Equal., L.F. (2)				090-076
				AC Power Cord				170-021
				Fuseholder				178-099
				Shipping Carton				033-227
				Capacitor Box Assy.				045-145
				Audio Cable				170-015
				Owners Manual				039-073